

El Paso
Metropolitan
Planning
Organization

TRANSPORTATION CONFORMITY REPORT

Amended Destino 2045 Metropolitan
Transportation Plan and Destino 2021-2024
Transportation Improvement Program

5/18/2020

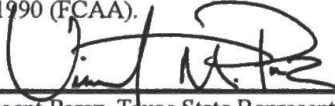
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**EL PASO METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION POLICY BOARD
RESOLUTION ADOPTING THE TRANSPORTATION CONFORMITY REPORT FOR
THE AMENDED DESTINO 2045 METROPOLITAN TRANSPORTATION PLAN (MTP)
AND
DESTINO 2021-2024 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)
FOR THE PARTICULATE MATTER NONATTAINMENT AREA,
THE CARBON MONOXIDE MAINTENANCE AREA, AND THE DESIGNATED
SUNLAND PARK NEW MEXICO NONATTAINMENT AREA UNDER THE 2015
OZONE NATIONAL AMBIENT AIR QUALITY STANDARD**

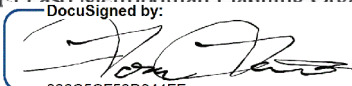
A conformity determination has been made that the Amended Metropolitan Transportation Plan (MTP) and Transportation Improvement Program (TIP) have met the requirements for Carbon Monoxide (CO), Particulate Matter of 10 Microns or less in size (PM₁₀), and Ozone (O₃) reductions set forth in the U.S. Environmental Protection Agency's (EPA's) final rule on conformity. Therefore, the MTP and TIP have been determined to:

- (i) be consistent with the most recent estimates of mobile source emissions;
- (ii) provide for expeditious implementation of transportation control measures in the applicable implementation plan;
- (iii) meet the requirements of the Transportation Conformity Guidance for 2015 Ozone National Ambient Air Quality Standards (NAAQS) Nonattainment Areas, and
- (iv) contribute to annual emissions reductions consistent with sections 182(b)(1) and 187(a)(7) with respect to CO, PM₁₀ and O₃.


It is therefore shown that the Amended El Paso Metropolitan Planning Area's Destino 2045 MTP and the Destino 2021-2024 TIP are in conformity under the Federal Clean Air Act Amendments of 1990 (FCAA).



Vincent Perez, Texas State Representative
Chair, Transportation Policy Board
El Paso Metropolitan Planning Organization

DocuSigned by:

836C5CF53D844FE...

Tomas Trevino, P.E., District Engineer
Texas Department of Transportation-El Paso District



Trent Doolittle, P.E., District Engineer
New Mexico Department of Transportation-District

TABLE OF CONTENTS

Executive Summary	7
1.0 Introduction.....	13
1.1 MPO Organization and Role.....	13
1.2 Purpose.....	13
1.3 Conformity Criteria.....	13
1.4 Document Format.....	14
1.5 Electronic Data Submittal.....	14
1.6 Pre-Analysis Consensus Template.....	14
2.0 MTP and TIP Conformity to the SIP.....	15
2.1 Overview.....	15
2.2 Submittal Frequency.....	15
2.3 Transportation Control Measures.....	16
2.4 Regionally Significant Control Programs.....	16
2.4.1 Inspection and Maintenance Program.....	16
2.5 Regionally Significant Travel Projects/Programs.....	17
2.6 Non-Federal Projects/Programs.....	17
2.7 Exempt Projects/Programs.....	18
2.8 Financial Planning for the Destino 2045 MTP.....	19
2.9 Financial Planning for Corresponding Destino 2021-2024 TIP.....	21
3.0 Vehicle Activity.....	23
3.1 Demographic Specification	23
3.2 Travel Demand Model	24
3.2.1 Travel Model Description	25
4.0 Emissions Budget and MOVES Model.....	26
4.1 Overview	26
4.1.1 Assumptions	26
4.1.2 Methodology	26
4.1.3 Data Sources and Development	26
4.2 MOVES2014a Inputs	27
4.2.1 Summary of Control Programs Modeled	27
4.2.2 I/M Program	27
4.2.3 Anti-Tampering Program (ATP).....	27
4.2.4 Oxygenated Fuel, Fuel Reid Vapor Pressure, and Diesel Sulfur Content.....	27
4.2.5 Temperatures by Time Period	27
4.2.6 Vehicle Registration Distributions and Diesel Fractions	30
4.2.7 Vehicle Registration Distributions	30
4.2.8 Diesel Fractions	30

4.2.9 VMT Mix	30
4.2.10 TRANSVMT Inputs	31
4.2.11 Time-of-Day Factors	31
4.2.12 Area Type Specifications	31
4.2.13 Time-of-Day Directional Split Factors	32
4.2.14 Time-of-Day Capacity Factors	32
4.2.15 Free Flow Speed Factors	32
4.2.16 Speed Model Formulation	32
4.3 Post Processed Adjustments	33
5.0 Mobile Source Emissions Reductions Strategies (MOSERS)....	34
5.1 Transportation Control Measures (TCMs)	34
5.2 VMEP	34
5.3 TERM	34
5.4 CMAQ	34
6.0 Determination of Regional Transportation Emissions.....	36
6.1 Procedure	36
6.1.1 Mobile Source Emissions Estimate.....	36
6.1.1.1 MOVES	36
6.1.2 TTI Emissions Estimation Utilities	37
6.2 Calculated Emissions	38
6.2.1 Calculated Link-Based Emissions	38
6.2.2 Calculated Emissions for Donut Areas	38
6.3 Emissions Estimations Utilities	38
6.3.1 TRANSVMT	38
6.3.2 VehPopulationBuild.....	38
6.3.3 OffNetActCalc.....	38
6.3.4 MOVESactivityInputBuild.....	39
6.3.5 MOVESfleetInput Build.....	39
6.3.6 RatesCalc.....	39
6.3.7 RatesAdj.....	39
6.3.8 EmsCalc	39
6.4 Final Emission Analysis Results	41
6.4.1 Network-Based Model	41
6.4.2 Off-Network TERMS	43
6.4.3 Summary	44
7.0 Interagency Consultation.....	44
7.1 Process Description	44
8.0 Public Participation.....	46

GLOSSARY OF ABBREVIATIONS

APU	Auxiliary Power Unit
ATOM2	Texas Spatially Disaggregate Trip Distribution Model (Atomistic Model)
ATP	Anti-Tampering Program
ATR	Automatic Traffic Recorder
BBER	Bureau of Business and Economic Research
BRT	Bus Rapid Transit
CD	Compact Disc
CDB	County Data Base
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation & Air Quality Improvement Program
CMP	Congestion Management Process
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CO₂	Carbon Dioxide
DPS	Department of Public Safety
EF	Emissions Factor
EMFAC	Emissions Factor Model
EMSCALC	Emissions Calculation Program
EPA	U.S. Environmental Protection Agency
EPMPO	El Paso Metropolitan Planning Organization
FCAA	Federal Clean Air Act and Federal Clean Air Act Amendments of 1990
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GC	Gas Cap
HC	Hydrocarbons
HDV	Heavy-Duty Vehicle
HPMS	Highway Performance Monitoring System
I/M	Inspection/Maintenance Program
LDV	Light Duty Vehicle
LOS	Level of Service
LPG	Liquefied Petroleum Gas
MOBILE	EPA-approved emissions modeling software
MOVES	MOtor Vehicle Emission Simulator
MOSERS	Mobile Source Emission Reduction Strategies
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
MVEB	Motor Vehicle Emission Budget
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NMDOT	New Mexico Department of Transportation
NMED	New Mexico Environment Department
NO_x	Nitrogen Oxides

OBD	On-Board Diagnostics
PM2.5	Particulate Matter 2.5 Microns or Less
PM10	Particulate Matter 10 Microns or Less
PPP	Public Participation Program
RVP	Fuel Reid Vapor Pressure
ROW	Right of Way
SED	Socioeconomic and demographic data
SHI	Source-hours-extended-idling
SHO	Source hours operating
SHP	Source-hours-parked
SIP	State Implementation Plan
SUT	Source use types
TAC	Texas Administrative Code
TAZ	Traffic Analysis Zone
TERM	Transportation Emission Reduction Measures
TCM	Transportation Control Measure
TCEQ	Texas Commission on Environmental Quality
TCR	Transportation Conformity Report
TDM	Travel Demand Model
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TPAC	Transportation Project Advisory Committee
TPB	Transportation Policy Board
TPEPP	Texas Populations Estimates and Projection Programs
TransCAD	Transportation GIS Software
TRANSVMT	Utility post-processing TDM
TRIPCAL5	Trip Generation Program
TSI	Two-Speed Idle
TTI	Texas A&M Transportation Institute
TWC	Texas Workforce Commission
TWG	Technical Working Group
TxDMV	Texas Department of Motor Vehicles
TxDOT	Texas Department of Transportation
TxDOT TP&P	Texas Department of Transportation Planning and Programming Division
UE	User equilibrium
UPWP	Unified Planning Work Program
USC	United States Code
UTP	Unified Transportation Program
VMEP	Voluntary Mobile Emissions Reduction Programs
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

EXECUTIVE SUMMARY

The Air Quality Conformity Analysis performed for the Amended Destino 2045 Metropolitan Transportation Plan (MTP) and the Destino 2021-2024 Transportation Improvement Program (TIP) demonstrated that the projected emissions of Carbon Monoxide (CO) and Particulate Matter 10 Microns or Less (PM₁₀) conform to the Motor Vehicle Emissions Budget (MVEB) enacted by the Texas Commission on Environmental Quality (TCEQ) and approved by the U.S. Environmental Protection Agency (EPA), and the projected emissions of Ozone (O₃) meet the requirements approved by the U.S. Environmental Protection Agency (EPA) for the 2015 Ozone National Ambient Air Quality Standard (NAAQS). For the purpose of this conformity determination per guidance from the consultative partners, regional emissions analysis for CO was conducted only for year 2020, based upon the EPA approval of the El Paso CO Limited Maintenance Plan (LMP) in September 2017. In accordance with the CO LMP, a regional emissions analysis for analysis years beyond 2020 is not required. Per guidance from the consultative partners, an interim emissions test no-greater-than-baseline-year will be developed for the non-attainment area under the 2015 Ozone NAAQS. This transportation conformity analysis was obtained by projecting vehicle miles and hours traveled from the TransCAD Travel Demand Model (TDM), calculating emissions of these vehicles using the MOtor Vehicle Emission Simulator (MOVES2014a) (released December 2015 and updated November 2016) and AP-42 section 13.2.1 models (EPA, January 2011), and comparing the results to the MVEB for the County of El Paso, Texas for the CO and PM₁₀ pollutants, and comparing the results of the 2017 baseline year against the analysis years 2020, 2030, 2040 and 2045 according to the interim emissions test no-greater-than-baseline-year. It should be noted that the CO maintenance plan budget covers a portion of the City of El Paso and although the PM₁₀ nonattainment area is the City of El Paso, the PM₁₀ budget covers El Paso County (Appendix A page 5).

The Destino 2045 MTP is a 27-year plan with approximately \$6 B of multimodal projects and programs included in fiscal years (FY) 2019-2045. The El Paso Metropolitan Planning Organization (EPMPO) study areas stretches across the state line between Texas and New Mexico, including El Paso County in Texas, Southern Dona Ana County, and a portion of Otero County in New Mexico. Facilitating the movement of people and goods throughout the region over this period of time presents numerous challenges from a financial standpoint. Projects and programs in the Texas portion of the EPMPO study area are approximately \$5B. Transit projects come to approximately \$983M. New Mexico projects total approximately \$60M. See Appendix C, for the financial summary and project list, which demonstrates a thorough comparison of project revenues and associated project costs in the Destino 2045 MTP.

The Amended Destino 2045 MTP, Destino 2021-2024 TIP and Transportation Conformity Report was presented to the El Paso MPO Transportation Policy Board (TPB) on May 22, 2020 for adoption.

Networks

The TDM has a validated 2012 base year, a 2017 baseline year as required for conformity determinations used for the no-greater-than-baseline-year test as an interim emissions test for the 2015 Ozone NAAQS non-attainment area and forecast network years of 2020, 2030, 2040 and

2045. The forecast years incorporate projects current in the MTP and TIP. The model outputs were then sent to the Texas A&M Transportation Institute (TTI) for emissions analysis.

Conformity Requirements

The Texas Commission on Environmental Quality (TCEQ) and New Mexico Environmental Department (NMED) prepared State Implementation Plans (SIPs), and currently NMED is preparing the SIP required for marginal nonattainment areas for the Ozone nonattainment area (Dona Ana County) as described in the following subsections:

El Paso CO Maintenance Plan

There have been no monitored violations of the CO eight-hour standard since 2001. The maintenance plan approved by EPA in August 2008 (effective on October 3, 2008), demonstrates that El Paso will remain in attainment of the CO standard for at least ten years following EPA approval. This maintenance plan includes a commitment to submit a second 10-year maintenance plan two years before the end of the first 10-year maintenance plan period. This was satisfied by a limited maintenance plan that was adopted by the TCEQ September 7, 2016 and approved by EPA September 8, 2017, effective October 10, 2017. The maintenance plan ensures that the area remains in attainment of the CO standard. The maintenance area boundary is described in the EPA Green Book as follows: "That portion of the City of El Paso bound on the north by Highway 10 from Porfirio Diaz Street to Raynolds Street, Raynolds Street from Highway 10 to the Southern Pacific Railroad lines, the Southern Pacific Railroad lines from Raynolds Street to Highway 62, Highway 62 from the Southern Pacific Railroad lines to Highway 20 and Highway 20 from Highway 62 to Polo Inn Road; bound on the east by Polo Inn Road from Highway 20 to the Texas Mexico border; bound from the south by the Texas-Mexico border from Polo Inn Road to Porfirio Diaz Street; and bound on the west by Porfirio Diaz Street from the Texas-Mexico border to Highway 10."

PM₁₀ SIP

The TCEQ submitted "Revisions to the State Implementation Plan (SIP) for Inhalable Particulate Matter (PM₁₀): 1991 PM₁₀ SIP for Moderate Area - El Paso" to the EPA in 1991. The EPA approved the SIP submittal in 1994. The PM₁₀ non-attainment area described in the EPA Green Book is the City of El Paso.

New Mexico PM₁₀ SIP

Anthony, New Mexico, in Doña Ana County, was designated as non-attainment for the PM₁₀ 24-hour NAAQS in 1991. Part of the PM₁₀ Moderate Area SIP Guidance requires anthropogenic (man-made) source categories with significant emissions to be analyzed for technical and economic feasibility of implementing control measures. A copy of New Mexico's PM₁₀ SIP is included in Appendix A (page 22-106). There is no PM₁₀ budget established for Anthony, NM, however, an air quality assessment may be conducted on an individual project basis, in coordination with the New Mexico consultative partners, to examine the potential effects on PM₁₀ within the Anthony, NM PM₁₀ non-attainment area.

The non-attainment area is described in the EPA Green Book as the following: "The area bound by Anthony Quadrangle, Anthony, New Mexico - Texas. SE/4 La Mesa 15' Quadrangle, N3200 -

W10630/7.5, Township 26S, Range 3E, Sections 35 and 36 as limited by the New Mexico - Texas State line on the south”.

New Mexico Ozone SIP

Dona Ana County historically had air quality problems, including particulate matter and ozone pollution. In 1995, the EPA declared a 42 square-mile region in the southeast corner of the County on the border of Texas and Mexico as a marginal nonattainment area for the 1-hour ozone standard. The nonattainment area included the City of Sunland Park, Santa Teresa, and La Union, New Mexico. Sunland Park was officially designated as nonattainment for ozone in a Federal Register announcement published June 12, 1995 (60 FR 30789).

On April 30, 2004, EPA designated the Sunland Park area as attainment of the 1997 8-hour ozone standard. As part of implementation of the 1997 8-hour ozone standard, EPA revoked the 1-hour ozone standard in 2004. Due to this revocation, New Mexico was required to provide a 10-year [maintenance plan](#) for the Sunland Park 1997 8-hour ozone attainment area under section 110(a)(1) of the Clean Air Act. Motor vehicle emissions budgets were not required under the 110(a)(1) maintenance plan, and therefore none were developed or approved.

On October 1, 2015, the United States Environmental Protection Agency (EPA) revised the 8-hour Ozone NAAQS ([73 FR 16436](#)), from 0.075 parts per million (ppm) to 0.070 ppm ([80 FR 65292](#)). In 2016, New Mexico Environment Department (NMED) [recommended](#) that EPA designate a portion of Doña Ana County near Sunland Park, NM as nonattainment Appendix A. Based on 2014-2016 ozone monitoring data, EPA designated the area as a marginal nonattainment area on June 4, 2018 (Effective August 3, 2018) ([83 FR 25776](#)). The NMED is currently developing a nonattainment State Implementation Plan (SIP) for the Sunland Park area to meet the requirements of the 2015 O₃ NAAQS. In general, a nonattainment SIP for a marginal area must include an emissions inventory, adoption of Reasonably Available Control Technologies (RACT), nonattainment permitting programs, and an emissions offsetting program. The emission inventories SIP will not include a Motor Vehicle Emissions Budget and must be submitted to EPA no later than August 3, 2020. The remainder of the nonattainment SIP elements must be submitted to EPA by August 3, 2021.

Regional Emissions Analysis

Regional emissions analyses of transportation plans and improvement programs are developed to ensure that they are consistent with air quality requirements. The analysis for the EPMPO nonattainment areas accounts for emissions resulting from the EPMPO's MTP and TIP, including all regionally significant projects, and the effects of emission control programs.

Motor Vehicle Emissions Budgets

The PM₁₀ MVEB applies to El Paso County. The CO budget applies to the CO maintenance area. A regional emissions analysis for CO was conducted only for year 2020, based upon the EPA approval of the El Paso CO Limited Maintenance Plan (LMP) in September 2017. In accordance with the CO LMP, a regional emissions analysis for analysis years beyond 2020 is not required.

Table 1
Motor Vehicle Emissions Budgets for El Paso CO Maintenance
and PM₁₀ Non-Attainment Areas

	CO³	PM₁₀
Classification	Attainment/ Maintenance	Moderate Non- Attainment
MVEB tons/day	29.66 ¹	12.05 ²

¹ Approval and Promulgation of Implementation Plans; Texas; El Paso County Carbon Monoxide Redesignation to Attainment, and Approval of Maintenance Plan <https://www.gpo.gov/fdsys/pkg/FR-2008-08-04/pdf/E8-17700.pdf>

²Transportation Conformity: Motor Vehicle Emissions Budgets (MVEB) (Appendix A: El Paso PM-10 page 5)

³ For the purpose of this conformity determination per guidance from the consultative partners, a regional emissions analysis for CO was conducted only for year 2020, based upon the EPA approval of the El Paso CO Limited Maintenance Plan (LMP) in September 2017. In accordance with the CO LMP, a regional emissions analysis for analysis years beyond 2020 is not required.

As Dona Ana County does not have an adequate or approved budget, an interim budget test was used. On October 25, 2018 the El Paso Metropolitan Planning Organization (MPO) hosted a consultative partner's conference call to request guidance as it relates to the 2015 Ozone NAAQS designation for Sunland Park, New Mexico nonattainment area: interim emissions test and demonstration years. For the purpose of this conformity determination per guidance from the consultative partners, a no-greater-than-baseline year test was performed and baseline year 2017 was compared with the analysis years 2020 2030, 2040 and 2045.

Conformity Tests

MOVES2014a is the EPA-approved model for calculating aggregate motor vehicle emission factors (EF) for pollutants such as CO, direct PM₁₀, oxides of nitrogen (NO_x) and volatile organic compounds (VOCs), so that they can be compared: to the MVEB for CO and PM₁₀ and baseline year versus forecast years for VOC and NO_x. The official release of MOVES2014a (released December 2015 and updated November 2016) was applied for this analysis based on past consultative partners conference calls to request guidance on the use of MOBILE-based motor vehicle emission budgets (MVEBs) with a MOVES-based regional emissions analysis for the transportation conformity determination as MOVES-based MVEBs do not currently exist in the SIP and to perform the interim emission test required for the ozone non-attainment area without budget. For the purposes of this conformity determination, per guidance from the consultative partners on later conference calls and on the approval of the Pre-Analysis Consensus Plan on February 28th, 2020, it was recommended to use the previous PM₁₀ and CO MOBILE-based MVEBs for the transportation conformity determination for the MTP/TIP conformity for CO and PM₁₀ pollutants and perform the no-greater-than-baseline year interim emission test, requiring comparison of the 2017 baseline year to the forecast years 2020, 2030, 2040 and 2045 for VOC and NO_x pollutants.

The AP-42 model is also used to calculate emission factors for re-suspended road dust. It was designed to calculate a daily (average seasonal day) emissions factor for each of the four basic road types (Freeway, Arterial, Collector and Local) and to apply these rates to the appropriate Vehicle Miles Traveled (VMT) estimates by TDM functional classification. The MOVES2014a

program is executed using summer and winter temperature and conditions to simulate emissions for CO, PM₁₀, VOC and NO_x.

Modeling

TransCAD software was used to create the EPMPO's regional TDM. Inputs to the TDM include projected demographics for the analysis years to test the effects of proposed transportation projects (2017, 2020, 2030, 2040 and 2045); for the current amendment no changes were made to the original Destino 2045 demographics. Roadway networks were prepared for these years showing the number of lanes and roadway types (functional class) that would be constructed according to current MTP and TIP project descriptions, as well as roadways that already exist; for the current amendment changes were made to the original Destino 2045 networks. See Appendix J for Technical Memorandum-for updates on network coding.

Table 2
El Paso Conformity Analysis Summary
(Emissions expressed in Tons per Day)

Pollutant	Budget	2020⁵	2030	2040	2045
CO ¹	29.66³	5.06	-----	-----	-----
PM ₁₀ ²	12.05⁴	6.80/7.28	7.39/7.88	8.01/8.54	8.30/8.85

^{1,5} The CO Analysis is only for zones in the maintenance areas. For the purpose of this conformity determination per guidance from the consultative partners, a regional emissions analysis for CO was conducted only for year 2020, based upon the EPA approval of the El Paso CO Limited Maintenance Plan (LMP) in September 2017. In accordance with the CO LMP, a regional emissions analysis for analysis years beyond 2020 is not required. The MVEB of 29.66 tons per day (tpd) applies to the network year 2020. Emissions estimates indicate winter weekday and the meteorology data used were 1990.

²PM₁₀ emissions include summer/ winter figures. The PM₁₀ budget is based on the 1994 PM₁₀ Mobile Emissions Inventory. Using 2017 weather station data.

³ Approval and Promulgation of Implementation Plans; Texas; El Paso County Carbon Monoxide Redesignation to Attainment, and Approval of Maintenance Plan (<https://www.gpo.gov/fdsys/pkg/FR-2008-08-04/pdf/E8-17700.pdf>).

⁴Transportation Conformity: Motor Vehicle Emissions Budgets (MVEB) (Appendix A: El Paso PM-10).

Table 3
El Paso Conformity Analysis Summary¹
(Emissions expressed in Tons per Day)

YEAR	Pollutant (tons/day)	
	VOC	NO _x
2017 Baseline year	0.053	0.10
2020	0.047	0.08
2030	0.028	0.04
2040	0.019	0.03
2045	0.019	0.03

¹ This conformity determination demonstrates that the total emissions calculated from the modeled roadway network for future years will be at levels below the baseline year (2017) as required for the interim emissions test no-greater-than baseline year. Table 3 provides the conformity results for the VOC and NO_x no greater-than-baseline year emissions tests.

SECTION 1.0

INTRODUCTION

1.1 MPO Organization and Role

In the El Paso Transportation Management Area (TMA), the City of El Paso is designated as the fiscal agent for the Metropolitan Planning Organization (MPO), established pursuant to Section 134 of Chapter 1 of Title 23 of the United States Code (23 USC). The TPB is the transportation policy setting authority for the EPMPO. The TPB meetings are the forum for cooperative decision making by elected officials of local governments for the EPMPO Study Area. The EPMPO Study Area consists of El Paso County, and the southern portions of Doña Ana and Otero Counties in New Mexico. Appendix B provides a map of the EPMPO Study Area Boundary.

The MPO coordinates regional multimodal transportation plans involving the study of present transportation patterns in relation to existing and projected regional development. The TPB and its subcommittees carry out this coordination function. The MPO is responsible for the preparation of the MTP, the TIP, Transportation Conformity Report (TCR), the Unified Planning Work Program (UPWP), the Congestion Management Process (CMP), and other documents as required by 23 USC §134; the Federal Clean Air Act and Federal Clean Air Act Amendments of 1990 (FCAA); and respective SIPs.

1.2 Purpose

The purpose of this conformity analysis is to determine if the Amended Destino 2045 MTP and Destino 2021-2024 TIP are consistent with projected CO, PM₁₀, VOC and NO_x (Ozone) emission requirements.

1.3 Conformity Criteria

The FCAA requires transportation plans, programs, and projects in non-attainment and maintenance areas that receive approval and/or funding from the Federal Highway Administration (FHWA) or Federal Transit Administration (FTA), to demonstrate conformity. The main objective is to prevent future transportation development from causing new air quality violations, worsening existing violations, and/or delaying a region's attainment of the NAAQS.

The following is a summary of the key criteria used in this conformity determination:

- Use of interagency consultation (see Section 7.0)
- Incorporation of the latest planning assumptions in the planning documents and modeling
- Use of approved models and methodology
- Development of an MTP and TIP that conform to the interim emission test (no-greater-than-baseline year) for the ozone non-attainment area and to the MVEBs established in the SIP/Maintenance Plans for PM₁₀ and Ozone non-attainment areas.

1.4 Document Format

This conformity determination report follows the Model Conformity Documentation outline adopted by the Technical Working Group (TWG) for Mobile Source Emissions.

1.5 Electronic Data Submittal

The MTP, TIP, conformity documents for all non-attainment area within the EPMPO, attachments, and related technical documents are available on the EPMPO Web Site located at <http://www.elpasompo.org/> and electronically on a compact disc (CD) from the EPMPO. Please call (915) 212-0258 for a copy. The conformity determination is in Adobe (pdf) formats.

1.6 Pre-Analysis Consensus Template

The Pre-Analysis Consensus Template originates from the efforts of the TWG to develop a process for reaching early consensus on the parameters to be used for a conformity determination. A Pre-Analysis Consensus Plan was utilized for this conformity determination. The development of the networks and the emissions modeling are a two-step process and therefore some of the information in the Pre-Analysis Consensus template populated initially could be modified. The Pre-Analysis Consensus plan received consensus on February 28th, 2020 with the understanding that this was the current state of knowledge as of February 24th, 2020. The consultation partners agreed to move forward and include the analysis notes, containing the remaining details in the conformity document.

SECTION 2.0

MTP AND TIP

CONFORMITY TO THE SIP

2.1 Overview

2.2 Submittal Frequency

The MPO, under rules that govern nonattainment metropolitan areas, must approve a long-range plan every four years and a short-range program every four years, with all plans passing an analysis for conformity determination. If amendments are proposed to the MTP or TIP that would affect air quality and estimated emissions, an additional analysis must be made. One year after the effective date of designation of a new non-attainment area, FHWA/FTA conformity determination for the MTP and TIP must be completed. The EPMPO is proposing an amendment to the long range plan Destino 2045 MTP and an update to the TIP (Destino 2021-2024 TIP). The TPB follows the procedure of hearing and considering all public comments starting from March 29 to April 28, 2020 before adopting the respective MTP and TIP, however, there were no public comments submitted during the public involvement period for this Transportation Conformity Report, and 10 general comments were received, as described below. (refer to Appendix K)

Comment 1: Opposition to the concept described in Destino 2045 and other planning documents for I-10 segment 2, now known as Downtown 10.

MPO Response: The project referred to in this comment is already included in the 2045 Destino Metropolitan Transportation Plan, but is not part of the amendments that are being proposed.

Comment 2: The MPO is encourage to reassess this planning and amendment process (actual and future needs) for almost all these projects began with the assumption that we must add capacity to avoid congestion and preserve LOS, rather than looking to reduce traffic volumes by actually investing in a broader range of travel options, including transit and active transportation.

MPO Response: When MPOs amend their long range plans, such as the El Paso MPO's 2045 Metropolitan Transportation Plan (MTP), the basic underlying planning assumptions are typically not changed. The El Paso MPO will be formally initiating the development of the 2050 MTP in the month of May which will include multiple public involvement opportunities to provide input on the long term vision for our region.

Comment 3: Activate the projected Northeast Boderlands Expressway (NBE) before start any work on the downtown El Paso I-10 trench/deck. NBE will divert transcontinental traffic from frontage-road businesses both east and west of downtown.

MPO Response: The current 2045 Destino MTP of the El Paso MPO shows the Borderland Expressway project initiating in 2029 while the project along I-10that proposes to rebuild the segment that includes downtown El Paso is shown in 2031.

Comment 4: EPMPO is encouraged to see the consideration for widening I-10 corridor. A northern bypass of the city would also provide welcome relief for truckers and those simply passing through the city.

MPO Response: The El Paso MPO recognizes the importance of the I-10 corridor through our region and supports projects that make the flow of people and goods along I-10 more efficient.

Comment 5, 7, 9 and 10: Opposition I-10 Segment 2 (Downtown 10) for expanding the highway and building frontage roads next to low income and historical neighborhoods in Central El Paso and Downtown. Northeast Borderland Expressway must be build.

MPO Response: The project referred is already include in the 2045 Destino MTP, but is not part of the amendments that are being proposed.

Comment 6: Sunset Heights residents are uniformly against this project. The DOT has an inadequate conceptualization of the traffic projections involved.

MPO Response: The project referred to in this comment is already included in the 2045 Destino MTP, but is not part of the amendments that are being proposed.

Comment 8: The City of El Paso created a traffic fatality cross-functional team tasked with reviewing traffic-related fatal collisions. The team provides analysis and recommendations based in the available data. City of El Paso staff recommends expedited consideration for road diet projects in order to better address safety concerns. Staff recommends that coordination is conducted at a local level to better implements safety projects and integrate the city of El Paso MTP.

MPO Response: The El Paso MPO is currently coordinating and cooperating with the TxDOT, FHWA, and local partners, including the City of El Paso, in finding a way to increase safety by reducing collisions between motorized vehicles, bicyclists and pedestrians that results in serious injuries or fatalities.

2.3 Transportation Control Measures

There are no Transportation Control Measures (TCM) requirements identified in the PM₁₀ SIP and CO Maintenance Plan.

2.4 Regionally Significant Control Programs

Regionally significant control programs are intended to mitigate air pollution and assist an area in attaining the NAAQS. A mix of programs are selected by the state and are based on which programs are needed to attain the NAAQS. The selected control programs are incorporated into the appropriate SIP. Section 2.4.1, below, is one provision written in the SIP's for the nonattainment pollutants dealing with transportation-related measures.

2.4.1 Inspection and Maintenance Program

The current El Paso County Inspection and Maintenance (I/M) program, originating in 1987, employs the Two-Speed Idle (TSI) and the on-board diagnostics (OBD) tests. All 1995 and older model year vehicles are required to pass the TSI test. The TSI test measures tailpipe exhaust emissions of CO, Carbon dioxide (CO₂), and other hydrocarbons (HC) while the vehicle idles at both high and low

speeds and then includes a gas cap integrity test. The EPA-approved OBD test is required for all 1996 model year and newer vehicles. The OBD is an emission test to check the vehicle's on-board computer that identifies problems with the vehicle's emission control components.

Details of the I/M program and rules may be found in 30 Texas Administrative Code (TAC) Chapter 114 Subchapter C Division 1: Vehicle Inspection and Maintenance.

New Mexico is not required to have an Inspection and Maintenance Program (I/M population criteria). The basic and enhanced I/M requirements only apply to urbanized areas with population in excess of 200,000 depending on location.

2.5 Regionally Significant Travel Projects/Programs

The TDM used for conformity determination consists of existing roadways considered to be regionally significant in the base year (2012), baseline year 2017 and the regionally significant roadways expected to be in place for each of the intermediate and horizon years: 2020, 2030, 2040 and 2045 regardless of funding source.

The determination of regionally significant projects comes from the “Regionally Significant Project” definition found in 40 CFR Section 93.101. The definition is as follows:

“Regionally significant project means a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area’s transportation network , including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.”

Included in the TDM are the roadways on which conformity is based and thus considered regionally significant. Roadways in the travel demand model are coded with functional class and capacity classifications.

Regionally significant transit projects are represented through the mode share model. The model includes route systems for transit, with changes in speed or other operating conditions affecting the projected ridership. The mode share model has an effect on roadways by removing any projected transit riders before automobile vehicle trips are calculated and assigned to roadways.

2.6 Non-Federal Projects/Programs

The MTP contains population and land use assumptions that project urban growth to the year 2045 into areas that are now vacant or have rural-type development. It has been El Paso’s experience in the recent past that urban development involves the transition of totally or primarily vacant land (mainly desert) into subdivisions, with all services being provided in conjunction with the subdivision development, including water, sewer, roadways, and other services such as schools and parks. This has been accomplished through the subdivision ordinances of the City of El Paso and surrounding communities, and the relationship that the cities have with large developers who are able to build large-scale, phased developments. Although this procedure so far has occurred primarily within the larger cities and their extra-territorial jurisdictions, it can be expected that the same type of development will occur within other municipalities as urban growth expands.

2.7 Exempt Projects/Programs

Certain types of projects are defined in 40 CFR §93.126 that are exempt from conformity determination requirements. These projects generally do not add capacity to the roadway network and do not increase the transit miles traveled; thus, they add no new emissions to the metropolitan area. The examples listed in 40 CFR §93.126 include:

Safety

- Railroad/highway crossings
- Projects that correct/improve/eliminate a hazardous location or feature
- Safer non-Federal-aid system roads
- Shoulder improvements
- Projects that increase sight distance
- Highway Safety Improvement Program Implementation
- Traffic control devices and operating assistance other than signalization projects
- Railroad/highway crossing warning devices
- Guardrails, median barriers, crash cushions
- Pavement resurfacing and/or rehabilitation
- Pavement marking
- Emergency relief
- Fencing
- Skid treatments
- Safety roadside rest areas
- Adding medians
- Truck climbing lanes outside the urbanized area
- Lighting improvements
- Widening narrow pavements or reconstructing bridges
- Emergency truck pullovers

Mass Transit

- Operating assistance to transit agencies
- Purchase of support vehicles
- Rehabilitation of transit vehicles (In PM_{10} nonattainment or maintenance areas, such projects are exempt only if they are in compliance with control measures in the applicable implementation plan.)
- Purchase of office, shop, and operating equipment for existing facilities
- Purchase of operating equipment for vehicles
- Construction or renovation of power, signal, and communications systems
- Construction of small passenger shelters and information kiosks
- Reconstruction or renovation of transit buildings and structures
- Rehabilitation or reconstruction of track structures, track, and trackbed in existing right of way
- Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet
- Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR Part 771

Air Quality

- Continuation of ride-sharing and van-pooling promotion activities at current levels
- Bicycle and pedestrian facilities.

Other

- Specific activities which do not involve or lead directly to construction, such as:
 - Planning and technical studies
 - Grants for training and research programs
 - Planning activities conducted pursuant to Titles 23 and 49 U.S.C.
 - Federal-aid systems revisions
- Engineering to assess social, economic, and environmental effects of the proposed action or alternatives to that action
- Noise attenuation
- Emergency or hardship advance land acquisitions
- Acquisition of scenic easements
- Plantings, landscaping, etc.
- Sign removal
- Directional and informational signs
- Transportation enhancement activities (except rehabilitation and operation of historic transportation buildings, structures, or facilities)
- Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational or capacity changes

2.8 Financial Planning for the Destino 2045 MTP

The Destino 2045 MTP is a 27-year plan with approximately \$6B of multimodal projects and programs included in fiscal years (FY) 2019-2045. The EPMPO study area stretches across the state line between Texas and New Mexico, including El Paso County in Texas, Southern Dona Ana County, and a portion of Otero County in New Mexico. Facilitating the movement of people and goods throughout the region over this period of time presents numerous challenges from a financial standpoint. Projects and programs in the Texas portion of the EPMPO study area are approximate \$5B. Transit projects come to approximately \$983M. New Mexico projects total approximately \$60M. See Appendix C, for the financial summary and project list, which demonstrates a thorough comparison of project revenues and associated project costs in the Destino 2045 MTP.

There is a mix of FHWA, FTA, state (Texas and New Mexico) and local revenues used to cover associated project costs in the Destino 2045 MTP. It should be noted that all federal funds herein have been calculated to include the required local match, usually 20%. The Destino 2045 MTP includes total project cost, comprised of construction, Right-of-Way (ROW), and preliminary engineering costs. Ten years of the Destino 2045, FY 2020-2029, are fiscally constrained by funding category, followed by fiscal constraint in FY 2030. Banding together multiple years was applied for financial constraint in the outer years of the plan from 2031-2040 and 2041-2045. The EPMPO coordinated with Texas Department of Transportation (TxDOT) and New Mexico Department of Transportation (NMDOT) to determine acceptable inflation rates for projects within their respective states. This resulted in compounded inflation rates of 4% in Texas, and 1.5% in New Mexico.

The EPMPO administers three FHWA administered funding categories, Congestion Mitigation and Air Quality (CMAQ), Surface Transportation Program in urbanized areas for metropolitan mobility projects and the Transportation Alternative Program (TAP), which incorporates safe routes to schools and the recreation trails program. Texas CMAQ and STP-MM funds were accounted for through the Texas 2020 Unified Transportation Program (UTP) for years 2020-2029 of the Destino 2045 MTP. The 2020 UTP trend grows the CMAQ and STP-MM programs at 1.01%. This growth is in line with the historical average, and the EPMPO continued this growth rate throughout the remaining years of the Destino 2045 MTP with total Texas CMAQ revenue of \$280M, and total STP-MM revenue of \$622M. New Mexico CMAQ and STP-Large Urban revenue expectations were coordinated with NMDOT, and at the direction of NMDOT there was no growth rate applied to these programs in the Destino 2045 MTP. The total New Mexico CMAQ revenue is \$47M and total STP-Large Urban revenue is \$27M. The total Texas TASA program is \$39M, and NMDOT provides available TAP funds as they become available for planning and programming purposes. Federal funding administered by the EPMPO in the Destino 2045 is in line with historical trends and no reduction of these funds are expected in the future. The EPMPO is also the designated recipient for the FTA 5310 program to meet the transportation needs of elderly persons and persons with disabilities where public mass transportation services are otherwise unavailable, insufficient or unequipped to handle their needs. Based on historical trends the EPMPO has estimated \$650,000 each year, 2019-2045, for a total of \$17, 550,000 in the Destino 2045 MTP.

From 2019-2022 approximately \$15M of CMAQ funds are being transferred from FHWA to FTA for Sun Metro to operate Bus Rapid Transit (BRT) and street car projects. Sun Metro will continue to receive traditional FTA 5307 formula funds for programs such as capital maintenance, planning and ADA Para Transit for approximately \$509M, and for Transit Enhancement type projects covered by FTA 5339 funds for nearly \$100M, which includes approximately \$51M for buses and bus facilities. The FTA 5307 and 5339 funds are growing at a modest rate of just over 1% in the Destino 2045 MTP. Three Sun Metro projects are programmed with the expectation of receiving FTA 5309 Very Small Starts funding. Historically, Sun Metro has received Very Small Starts funding when leveraged by local funding. Design and Construction for Streetcar Phase II - Service to from downtown to the Medical Center of the Americas (MCA), FY 2025, Design & Construction for Juarez & El Paso International Pedestrian Crossing, FY 2026, and Design and Construction for Transit Center for intercity and international transit, FY 2026, are all programmed at 50% Certificates of Obligation and 50% FTA 5309 Very Small Starts funding. The total project cost for the three projects is approximately \$332M.

TxDOT's 2020 UTP was used to account for financial constraint of Texas highway projects and programs, within the Destino 2045 MTP from 2020-2029, through traditional federal revenues from Categories 1-12. Unless otherwise noted, most of these funding categories continue throughout the Destino 2045 MTP, but no additional growth rate beyond 2029 was applied. Some of these categories are not used for specific projects but are a demonstration of programs, such as Category 1- Preventative Maintenance and Rehabilitation, Category 6-Structure Replacement and Rehabilitation, and Category 8-Safety Projects. Local contributions (which is beyond required local match to federal funds) is captured under Category 3 for projects in the Texas portion of the EPMPO study area.

TxDOT proposed additional revenues assumptions in the Destino2045 MTP: \$217M Clear Lanes Initiative (funds to address Texas' most congested choke points). \$438M bonding revenue for

Borderland Expressway (AKA Northeast Parkway) in 2029. \$180M of El Paso-District allocation of Rider 11B Border Funding between 2022-2031. \$669M of Category 2 (Transportation Management Area Corridors) from 2028-2045. \$ 50M in Toll Revenue, in 2031, generated from the first 10 years of operation of the Border West Expressway. \$900M combined between two Texas funding sources - Proposition 1 (which allocates money from the rainy day fund to state highway fund for construction, maintenance and rehabilitation) and Proposition 7 funds (which supplies funding to the State Highway Fund from sales and use tax and state motor vehicle tax to build, maintain and restore non-tolled public roads) was distributed throughout the plan between 2030 and 2045.

NMDOT proposed federal and state revenues at approximately \$80M through a combination of STP-Large Urban, STP-Flex, National Highway Performance Program (NHPP), National Highway Performance-Freight (NHPP-F) and Border State Infrastructure (SBSI) funds for the Bridge Replacement at NM 404/IH-10, in 2021, Construction of NM 404 Super 2 from IH-10 to NM 213, in 2023, Widening of NM 404 from IH-10 to NM 213 and Widening of NM 213 from NM 404 to Texas state line, in 2029.

Local government agencies within the EPMPO study area, including, but not limited to the City of El Paso and the County of El Paso, have projects programmed in the Destino 2045 MTP. Approximately \$575M of local multimodal projects are included with funding from federal and local resources.

On 12/6/17 the Transportation Project Advisory Committee (TPAC) recommended the Destino 2045 MTP Project List and Financial Summary to the Transportation Policy Board (TPB) for approval on December 15, 2017. Public involvement for the Destino 2045 MTP, 2021-2024 TIP and Transportation Conformity Report was scheduled March 9, 2018 – April 9, 2018. The TPB approved the final Destino documents on May 18, 2018. On 03/4/20 the Transportation Project Advisory Committee (TPAC) recommended the Amended Destino 2045 MTP Project List and Financial Summary to the Transportation Policy Board (TPB) for approval on March 27, 2020. Public involvement for the Amended Destino 2045 MTP, 2021-2024 TIP and Transportation Conformity Report was scheduled March 29, 2018 – April 30, 2018. The TPB approved the final Amended Destino documents on May 22, 2020.

2.9 Financial Planning for the Destino 2021-2024 TIP

The Destino 2021-2024 TIP covers a program horizon of four fiscally constrained years. The Destino 2021-2024 TIP is consistent with the Amended Destino 2045 MTP, and contains regionally significant projects to be funded with federal and non-federal funds. Inclusion of a project in the Destino 2021-2024 TIP reflects a consensus of priority needs among residents living in the MPO study area, locally and state-elected officials, local transportation agency representatives, and representatives of TxDOT and NMDOT. The Destino 2021-2024 TIP is, in effect, a listing of transportation priority needs that will be implemented that contain total estimated costs and implementation dates. The Destino 2021-2024 TIP may be amended as transportation needs and/or funding levels change.

The Destino 2021-2024 TIP is fiscally constrained for transit projects and highway projects in the New Mexico and Texas portion of the El Paso MPO study area. This area is comprised of El Paso County, southern Dona Ana County, NM, and a small portion of Otero County, NM. The majority of projects are in the highway section for Texas, but all federal, state and locally funded projects of regional significance in the El Paso MPO study area are included.

Traditional federal funding categories that flow through TxDOT into the TIP are based on revenue forecasts in TxDOT's associated Unified Transportation Program (UTP). The UTP reflects the projects and programs that may be delivered from available forecasted funding in Texas over a 10-year period. Close coordination is ongoing with NMDOT on available funds to be used in New Mexico. Transit projects are funded with FTA funds, and local funds. Most of the transit funding is for Sun Metro projects, the mass transit provider in the region.

Meetings of the Transportation Project Advisory Committee (TPAC), which recommends projects for approval, and the TPB, which approves projects in the TIP were used as open forum for the MPO public involvement process. The required 30-day public involvement/comment period was met for the Destino 2021-2024 TIP. These meetings were advertised in local newspapers. At the time of the approval of the Amended Destino 2045 MTP the corresponding Destino 2021-2024 TIP was also approved by the TPB, on May 22, 2020.

SECTION 3.0

VEHICLE ACTIVITY

Section 3.0 describes the basic TDM inputs and approach used to develop the modeled volumes that are a necessary part of the air quality conformity process. Two of the primary travel model inputs - networks (e.g., an electronic representation of the current and future transportation system made up of links and nodes) and demographics - are briefly described below. The demographics from the original Destino 2045 MTP were not modified for the current amendment, only the networks were updated (refer to Appendix J – Technical Memorandum).

3.1 Demographic Specification for the Destino 2045 MTP

To develop the 2012 base year demographic estimates and 2017, 2020, 2030, 2040 and 2045 demographic forecasts for the Destino 2045 TDM, first a review of the 2012 socioeconomic and demographic data (SED) developed for the Destino MTP was done by comparing data from various sources: 2010 Census population information, The University of New Mexico Bureau of Business and Economic Research (BBER) and Texas Workforce Commission (TWC). Several findings and recommendations were identified after the comparison of the data. Based on the recommendations and comments received from Texas Department of Transportation Planning and Programming Division (TxDOT TP&P), various steps were undertaken to bring the Destino 2012 socioeconomic data in El Paso County closer to observed data.

The 2010 population from the Destino TDM was first updated using 2010 census block population data. The individual Traffic Analysis Zone (TAZ)-specific growth rates between years 2010 and 2012 from the Destino TDM were then applied to obtain 2012 population. The individual TAZ populations in El Paso County were then scaled to be consistent with the Texas Populations Estimates and Projection Programs (TPEPP) 2012 control total. The TPEPP population growth rate for El Paso County was applied for the New Mexico side of the MPO in order to obtain control totals for the TAZs falling outside El Paso County. The growth rates were checked against the growth rates of Doña Ana County, and the growth patterns are similar. El Paso County growth patterns were used because that was the best data available and the TPEPP data is very thorough. The 2012 control total was then used to proportionally scale the base year population.

The 2012 employment data was initially obtained from a previous TDM (Horizon TDM). Such estimates were created before TWC 2012 data was available. For the Destino TDM, in order to represent actual employment as much as possible, the basic, retail and service employment were derived directly from 2012 TWC data for El Paso County, now available. In the particular case of education employment, TWC data is provided lumped at the main school district offices, therefore such data needed to be further distributed on each district's TAZs; for this, the previous TDM (Horizon TDM) education percentages were applied to the new 2012 TWC control totals by district.

The results of the socioeconomic data update were reviewed by the EPMPO, TxDOT El Paso District and TxDOT TP&P. Revisions were made based on feedback from the review combined with additional follow up analysis. Further information on the development of the demographic data for

the base and forecast years associated with each TAZ can be found in Appendix G – Destino 2045 Travel Demand Model Development.

The final TAZ geography contains 869 TAZs, including 21 external stations and several border crossings.

Table 4
Summary of Demographic Data for the El Paso MPO area

	2012	2017	2020	2030	2040	2045
Population	876,646	941,124	1,050,416	1,186,027	1,311,439	1,373,481
Employment	307,368	329,826	368,186	415,793	460,405	482,584
Households (HH)	290,628	311,359	348,043	394,069	436,295	457,170

Source: El Paso MPO, 2018

Table 5
Summary of Demographic Data for the 2015 Ozone NAAQS nonattainment area

	2012	2017	2020	2030	2040	2045
Population	12,766	14,096	14,883	17,273	19,023	19,883
Employment	1,365	1,424	1,437	1,566	1,733	1,824
Households (HH)	3,619	4,014	4,249	4,894	5,368	5,588

Source: El Paso MPO, 2018/TAZs: 781,783,782,780,779,778 & 775

3.2 Travel Demand Model

For the development of the 2045 Destino Travel Demand Model, the EPMPO sought a vendor to develop a Model interface along with the validation of the 2012 base year (refer to Appendix G) and development of the forecast years. The model factors, Highway Performance Monitoring System (HPMS) and the seasonal adjustment utilized for this conformity determination are indicated in Table 6. This section provides a brief description of the amended Destino Model. For the purpose of this conformity analysis TTI analyzed 2017,2020,2030,2040 and 2045, with 2017 as the baseline year for ozone interim no-greater-than-baseline year test.

Table 6
Travel Model Demand factors

Model Factor	Detail
HPMS ¹	0.9640668341
Seasonal Adjustment	<u>2017, 2020, 2030, 2040, & 2045 TDM (ANSWT) Seasonal Summer Weekday Factor: 0.96030</u> <u>2017, 2020, 2030, 2040 & 2045 TDM (ANSWT) Seasonal Winter Weekday Factor: 0.99055</u>

¹The HPMS Factor is calculated using TDM VMT excluding New Mexico VMT.

3.2.1 Travel Model Description

The study area for the Destino Model includes El Paso County in Texas and the southern portions of Doña Ana and Otero counties in New Mexico. The model base year is 2012, the model forecast years include 2020, 2030, 2040, and 2045, and the baseline year for the conformity analysis on the ozone nonattainment areas required for the [baseline year test \(in 40 CFR 93.119 \(e\) \(4\)\)](#) is 2017. The Destino Model uses a multiyear master line layer from which individual analysis year networks are derived for use in the analysis of travel demand in the El Paso area.

The Destino Model interface is a combination of TxDOT trip generation and distribution programs and standalone set of macros that run within the TransCAD travel demand modeling software platform.

The Destino Model is a trip-based model, typical of most state of the practice models, which is validated to daily traffic flows. The traffic flows are produced through a typical four step process that includes – trip generation, trip distribution, and mode share and traffic assignment, with a speed feedback loop. The trip generation and trip distribution procedures utilize TxDOT TP&P uniquely developed software, commonly referred to as the “Texas Package”.

Within the Texas Package, the TripCAL5 trip generation software is used to generate person trip ends for the El Paso travel demand model. The Destino Model uses TxDOT's ATOM2 trip distribution program to distribute the productions and attractions calculated by the trip generation program. The Destino Model includes as well a Logit-based mode choice procedure which converts person-trips into vehicle-trips (drive alone, share ride 2 and 3+), as well as transit, pedestrian, and bicycle trips. All of these trips are provided for four time-of-day periods: AM Peak, PM Peak, mid-day and night-time.

Finally, the Destino Model uses the TransCAD User Equilibrium (UE) Assignment for vehicle trips. The assignment procedure in the Destino model includes toll road modeling capabilities as well.

SECTION 4.0

EMISSIONS BUDGET AND MOVES MODEL

4.1 Overview

The TDM has a validated 2012 base year, a 2017 baseline year (required for the interim emissions test no-greater-than-baseline-year, and forecast network years of 2020, 2030, 2040, and 2045 (Appendix I- Emissions Analysis Notes include the network years). The forecast years incorporate projects proposed in the MTP and TIP. The model outputs were then sent to the Texas A&M Transportation Institute (TTI) for emissions analysis.

4.1.1 Assumptions

This document summarizes the MOVES2014a inputs and other inventory elements TTI used for developing the 2017, 2020, 2030, 2040, and 2045 on-road mobile source emissions inventories for the conformity analysis.

4.1.2 Methodology

TTI produced winter season weekday CO emissions (analysis year 2020), and summer season weekday VOC and NO_x emissions (2017 and forecast years) and both summer and winter weekday PM₁₀ (forecast years) emissions estimates for evaluation years. The procedure and data applied to develop the emissions estimates follows the same general methodology (i.e., hourly, TDM link-based) as applied in the most recent El Paso MTP conformity analysis. However, the procedure applied the latest planning assumptions to include data that are more recently available (e.g., new traffic assignments, latest available registrations data for development of vehicle fleet characteristics, latest MOVES2014a model release, as allowed by the timeframe of this analysis).

4.1.3 Data Sources and Development

The EPMPD provided the requisite 24-hour travel model traffic assignments and intrazonal trips. TTI provided the various seasonal weekday VMT adjustment factors (for total VMT and for hourly VMT distributions) based on the latest multi-year TxDOT El Paso Automatic Traffic Recorder (ATR) data, and the HPMS consistency factor (from travel model validation year). TTI also provided travel model traffic assignments and intrazonal trips by time period (AM Peak, Midday, PM Peak, and Overnight), as well as VMT mix by roadway functional classification group for the 24-hour period, based on recent multi-year classification counts.

The MOVES2014a speed-sensitive Freeway and Arterial drive cycle emissions factors were applied to the freeway and non-freeway (excluding Ramps) functional classifications, respectively, and the MOVES2014a Ramp drive-cycle emissions factors were applied to the Ramp functional classification.

TTI provided emissions estimates for 13 vehicle types in the typical summary form of hourly totals by county and road type as well as 24-hour totals. The MOVES2014a commands/inputs are located in Appendix I.

4.2 MOVES2014a Inputs

TTI developed the MOVES2014a model inputs according to guidance provided in *MOVES2014, MOVES2014a, and MOVES2014b Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity* (EPA, August 2018) and *MOVES2014a User Guide* (EPA, November 2015). Please see Appendix I for more detailed information on the MOVES Inputs.

4.2.1 Summary of Control Programs Modeled

This section summarizes the MOVES2014a commands and data parameter values used in MOVES2014a to model the El Paso I/M Program and Anti-Tampering Program (ATP), CO season Oxygenated Fuel Program and the Fuel Reid Vapor Pressure (RVP) Gasoline Program.

4.2.2 I/M Program

The El Paso I/M program consists of exhaust (start year 1987) and evaporative (start year 1997) component tests conducted on an annual basis. As of January 1, 2007, 1996 and newer I/M-subject vehicles equipped with OBD systems are tested under OBD and gas cap integrity (GC) tests, while pre-1996 and non-OBD equipped vehicles are tested under the TSI and GC tests. Please see Appendix I for more detailed information on the I/M Program.

4.2.3 Anti-Tampering Program (ATP)

The ATP is a statewide, annual vehicle inspection program that is included in the emissions factor modeling for areas that also administer an I/M program. The ATP became effective in El Paso in 1983. The ATP requires any person owning, operating, and/or selling a motor vehicle to ensure the systems or devices used to control emissions are in good and operable condition. The program requires the use of the equipment at all times, thus prohibiting the operator or vendor from tampering with the emissions control system of the vehicle. The program is administered by the Department of Public Safety (DPS). This program applies to the gasoline-fueled vehicle class within a two through twenty-four-year vehicle age. For this conformity analysis the I/M program and ATP were modeled using MOVES2014a commands and input parameters provided in Table XXXX of the ELP Destino Analysis notes found in Appendix I.

4.2.4 Oxygenated Fuel, Fuel Reid Vapor Pressure, and Diesel Sulfur Content

The El Paso Oxygenated Fuels Program, which began on October 1, 1992, requires that all gasoline in the area have a minimum oxygen content of 2.7 percent oxygen by weight from October 1 to March 31 of each year in order to control CO emissions. Please see Appendix I for more detailed information on the Oxygenated Fuel, Reid Vapor Pressure, and Diesel Sulfur Content.

4.2.5 Temperatures by Time Period

The ambient temperature input values (shown in Table 7 and Table 8 below) consist of the seasonal daily average hourly temperatures. These values were input to MOVES2014a by season. Table 7 includes the meteorological data 2017 used for PM₁₀ and Ozone (VOC and NO_x) inventories. Table 8 includes the meteorological data 1990, which is consistent with those inputs used in the CO Maintenance Plan and used for the 2020 CO inventory as guidance by the consultative partners on the conference call held on February 20th, 2020.

Table 7
Meteorological Inputs to MOVES: Temperature (T) - Fahrenheit, Relative Humidity (RH) –
Percent. (Meteorological Data 2017 used for PM and Ozone inventories)¹

Hour	Summer		Winter	
1:00 a.m.	78.51	45.05	47.44	46.81
2:00 a.m.	77.31	47.11	46.44	48.65
3:00 a.m.	76.27	49.05	45.46	50.32
4:00 a.m.	75.38	50.63	44.62	51.63
5:00 a.m.	74.47	52.45	43.71	53.29
6:00 a.m.	73.96	53.51	43.08	54.26
7:00 a.m.	75.19	51.26	43.39	52.85
8:00 a.m.	77.54	46.95	45.76	48.11
9:00 a.m.	80.13	42.42	48.91	43.16
10:00 a.m.	82.81	37.98	52.31	38.25
11:00 a.m.	85.38	33.88	55.29	34.22
12:00 p.m.	87.54	30.66	57.39	31.80
1:00 p.m.	89.27	28.03	59.07	29.61
2:00 p.m.	90.68	25.90	60.29	27.94
3:00 p.m.	91.85	24.01	60.83	27.40
4:00 p.m.	92.09	24.18	60.37	28.06
5:00 p.m.	91.62	24.77	58.77	30.20
6:00 p.m.	90.74	25.75	56.88	32.70
7:00 p.m.	89.02	28.24	55.16	35.17
8:00 p.m.	86.68	32.05	53.66	37.07
9:00 p.m.	84.78	34.61	52.16	39.26
10:00 p.m.	82.97	37.00	50.77	41.34
11:00 p.m.	81.28	40.04	49.58	42.97

¹Average hourly data from weather stations within El Paso County—June through August 2017 (provided by TCEQ). Temperatures in °F and percent relative humidity. These inputs apply to Ozone precursors (VOC, NOx) and PM10 pollutants for all analyses.

Table 8
Meteorological Inputs to MOVES: Temperature (T) - Fahrenheit, Relative Humidity (RH) - Percent, Barometric Pressure (BP) - Inches of Mercury¹. (Meteorological Data 1990, used for 2020 CO inventory)

Hour	Summer		
	T	RH	BP
12:00 a.m.	34.3	50.1	26.191
1:00 a.m.	32.7	53.6	
2:00 a.m.	31.0	55.0	
3:00 a.m.	29.9	57.4	
4:00 a.m.	28.6	58.7	
5:00 a.m.	27.9	60.0	
6:00 a.m.	26.0	63.9	
7:00 a.m.	27.7	62.0	
8:00 a.m.	34.5	51.9	
9:00 a.m.	42.9	40.7	
10:00 a.m.	49.0	33.8	
11:00 a.m.	54.6	28.1	
12:00 p.m.	58.0	25.3	
1:00 p.m.	59.9	23.2	
2:00 p.m.	62.0	21.3	
3:00 p.m.	63.0	20.4	
4:00 p.m.	62.5	21.2	
5:00 p.m.	59.1	23.8	
6:00 p.m.	52.8	30.5	
7:00 p.m.	50.0	33.1	
8:00 p.m.	44.2	41.9	
9:00 p.m.	40.8	44.3	
10:00 p.m.	39.1	46.4	
11:00 p.m.	37.3	50.5	

¹Hourly values are consistent with prior MOBILE6 “min/max temperature” command input values used in the original 1990 base year SIP emissions inventories and in prior El Paso MTP regional emissions estimates for conformity. TTI estimated the average hourly temperature values within the original min/max temperature input range (and hourly average relative humidity and barometric pressure values) using hourly weather data from the same dates and location (El Paso International Airport weather station) used for the original min/max temperature estimates. Degrees Fahrenheit and Percent for temperature and humidity, and Inches of Mercury for barometric pressure.

4.2.6 Vehicle Registration Distributions and Diesel Fractions

Vehicle registration (age) distributions and diesel fractions inputs to MOVES2014a were developed using the latest available Texas Department of Motor Vehicles (TxDMV) analysis year-specific mid-year county vehicle registration data. 2012 data was used for the 2012 base year. The latest

available data (2014) was used for the future analysis years; 2017, 2020, 2030, 2040, and 2045. The vehicle age distribution input data set are county level except for the heavy-duty vehicle (HDV) class 8b category which is state level. The diesel fractions input data sets (one for each evaluation year) are state level. MOVES2014a defaults were used where the required information was not available in the TxDMV data. The application of local registration distributions and diesel fractions follows guidance in [*MOVES2014, MOVES2014a, and MOVES2014b Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity*](#) (EPA, August 2018). Please see Appendix I for more detailed information on the vehicle age distributions and diesel fractions.

4.2.7 Vehicle Registration Distributions

The user-supplied vehicle registration distributions input to MOVES2014a are by vehicle age for any of the 13 composite (combined gasoline and diesel) vehicle types. MOVES2014a internal default distributions are applied for vehicle classes for which the analyst does not provide alternate values. The input values for each vehicle class are 30 age fractions representing the fraction of vehicles by age for that particular vehicle class as of July of the evaluation year. These age fractions start with the evaluation year as the 1st age fraction and work back in annual increments to end with the 30th fraction, which represents the fraction of vehicles of age 30 years and older. The fractions are calculated as the model-year-specific registrations in a class divided by the total vehicles registered in that class.

4.2.8 Diesel Fractions

MOVES2014a allows the modeler to specify diesel fractions for 13 composite (gasoline and diesel) vehicle categories by vehicle age. MOVES2014a assumes that urban/transit buses are 100 percent diesel, and that motorcycles are all gasoline fueled, so these two categories do not require diesel fractions. The diesel fraction represents the portion of diesel vehicles in a composite (gasoline and diesel) vehicle class for any vehicle age. When the modeler enters diesel fractions, all 13 sets of fractions are required. Each set of fractions contains the diesel fractions estimates for 30 vehicle ages from the evaluation year back through the 30th fraction, which represents vehicle ages of 30 years and older. The model year that MOVES2014a applies to each age-specific diesel fraction value depends on the calendar year of evaluation, thus the modeler must provide separate input for each evaluation year to be modeled.

4.2.9 VMT Mix

Using latest available vehicle classification counts (2005-2014) and associated year-end registration data (2013), TTI estimated the El Paso County time-of-day (AM Peak, Mid-Day, PM Peak, Overnight) VMT mixes by the four MOVES road types. No seasonal adjustments are made for VMT mix. The methodology is described in “*Developing MOVES Source Use Types and VMT Mix for Conformity Analysis*” (TTI, August 2016) Appendix I).

MOVES uses a different vehicle classification scheme than the FHWA categories. MOVES categorized the fleet based on nine different fuel types and 13 different source use types (SUTs). VMT mix is an estimate of the fraction of on-road fleet VMT attributable to each SUT by fuel type, and is used to subdivide the total VMT estimates on each link into VMT by vehicle type. Hourly estimates by vehicle type are combined with the appropriate emissions factors in the link-emissions

process. The Texas A&M Transportation Institute (TTI) originally developed a method for converting vehicle classification count data collected in the Federal Highway Administration (FHWA) vehicle classification categories (based on axle spacing and/or vehicle length) into the eight Mobile Source Emission Factor Model (MOBILE5) categories. This methodology was subsequently modified and expanded to include the 28 vehicle classification types contained in MOBILE6. An analogous approach to adapting these data for use with MOVES was developed in concept by TTI and implemented shortly thereafter. Please see Appendix I for more detailed information on the VMT Mix.

4.2.10 TRANSVMT Inputs

The TRANSVMT utility post-processes TDM output to produce hourly, seasonal and day-of-week specific, on-road vehicle, directional link VMT and speed estimates. The TRANSVMT utility processes a TDM traffic assignment by multiplying the link volumes by the appropriate HPMS, seasonal, or other VMT factors. Hourly factors are then used to distribute the link VMT to each hour in the day. For non/directional traffic assignments, directional split factors are also applied to produce VMT/volume estimates for each direction of travel.

A speed model involving both the link estimated free flow speed and estimated directional delay (as a function of volume and capacity) is used to estimate the operational time-of-day link speeds for each direction.

Since intrazonal links are not included in the TDM, special intrazonal links are created and the VMT and speeds for these special links are estimated using the intrazonal trips from the trip matrix and the zonal radii. The link VMT and speeds produced by TRANSVMT are subsequently input to the emissions calculation utility, EmsCalc, for applying the MOVES-based emissions factors.

4.2.11 Time-of-Day Factors

TTI used the multi-year TxDOT El Paso ATR data to develop one set of average weekday VMT factors for each seasonal period for all analysis years. These factors were applied to allocate the time period TDM assignment-based VMT by hour-of-day to determine emissions. Please see Appendix I for more detailed information on the time-of-day factors.

4.2.12 Area Type Specifications

The El Paso MPO planning area is divided into five area types designated by a code or label and defined as shown in Table 9.

Table 9
The metropolitan Planning Area Types

Label	
1	Business District
2	Urban Intense
3	Urban Central
4	Suburban
5	Rural

4.2.13 Time-of-Day Directional Split Factors

The 24-hour link assignment volumes, adjusted for season and HPMS consistency and allocated by time-of-day, are non-directional volumes (i.e., the sum of the volumes in the two directions on a link). Directional splits were applied to estimate the portion of the travel that occurred in each direction. These directional volume estimates were used to estimate the directional speeds. Application of the directional split factors resulted in two link records for each network link: one record containing the estimated VMT and speed in the peak (or dominant) direction, and the second record containing the estimated VMT and speed in the opposite direction. This allowed the application of MOVES emissions factors directionally by speed. Please see Appendix I for more detailed information on the time-of day directional split factors.

4.2.14 Time-of-Day Capacity Factors

Time-of-day (i.e., hourly) capacity factors were applied to non-directional capacity (or service volume) for each hour. In computing the directional volume/capacity (v/c) ratio for estimating the directional speeds, the directional split for capacity is assumed to be 50-50. Please see Appendix I for more detailed information on the time-of-day capacity factors.

4.2.15 Free Flow Speed Factors

The estimated free flow speed is used in conjunction with the estimated directional delay (in minutes/mile) to compute the directional congested speed. Unless free flow speeds are included in the TDM, free flow speed factors are used to convert TDM speeds (which are by definition level of Service (LOS) C to LOS A speeds (free flow)).

Details of this procedure are provided in the discussion of the speed model in Section 4.2.16. Please see Appendix I for more detailed information on the free flow speed factors.

4.2.16 Speed Model Formulation

The TDM speed model uses hourly volume and capacity to estimate delay. The link volume was also allocated by hour and direction using the VMT factors (HPMS and seasonal adjustments), hourly factors, and directional split factors. The development of hourly volume and capacity by direction is discussed previously in this document. The directional delay (in minutes per mile) due to congestion was calculated using the following volume/delay equation:

$$Delay = Min \left[A e^{B \left(\frac{V}{C} \right)}, M \right]$$

Where:

- Delay = congestion delay (in minutes/mile);
- A & B = volume/delay equation coefficients;
- M = maximum minutes of delay per mile; and
- V/C = time-of-day directional V/C ratio.

The delay model parameters (A, B, and M) were developed for the Dallas/Fort Worth area and verified by application in other Texas urban areas. Table 10 shows these parameters.

Table 10
Volume/Delay Equation Parameters

Facility Category	A	B	M
High-Capacity Facilities	0.015	3.5	5.0
Low-Capacity Facilities	0.050	3.0	10.0

Given the estimated directional delay (in minutes/mile) and the estimated free flow speed, the directional congested speed is computed as follows:

$$Congested\ speed = \frac{60}{\frac{60}{Freeflow\ speed} + Delay}$$

This model was applied at the link level by area type and functional class combination for each time period and each direction. Directional, hourly operational link speeds were estimated using the speed model, which estimates delay on each link as a function of volume-to-capacity, and applies it to the link's estimated free-flow speed. Local streets category link average operational speeds were estimated, represented by the centroid connector and added intrazonal links, as centroid connector TDM input speeds and the zone's average centroid connector input speed, respectively. Please see Appendix I for more detailed information on the speed model.

4.3 Post Processed Adjustments

No emissions rate adjustments were required and therefore no emissions rate adjustments via post-processing were performed.

SECTION 5.0

MOBILE SOURCE EMISSION REDUCTION STRATEGIES (MOSERS)

5.1 Transportation Control Measures (TCMs)

As defined by the EPA in the Transportation Conformity Regulations, a Transportation Control Measure (TCM) “is any measure that is specifically identified and committed to in the applicable implementation plan, including a substitute or additional TCM that is incorporated into the applicable State Implementation Plan (SIPs) through the process established in FCAA section 176(c)(8), that is either one of the types listed in FCAA section 108, or any other measure for the purpose of reducing emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions. Notwithstanding the first sentence of this definition, vehicle technology-based, fuel-based, and maintenance-based measures which control the emissions from vehicles under fixed traffic conditions are not TCMs for the purposes of this subpart.”

The approved El Paso CO Maintenance Plan, and El Paso and Anthony, NM, PM₁₀ SIP, do not contain any TCMs.

The NMED is currently developing a nonattainment State Implementation Plan (SIP) for the Sunland Park area to meet the requirements of the 2015 O₃ NAAQS. In general, a nonattainment SIP for a marginal area must include an emissions inventory, adoption of Reasonably Available Control Technologies (RACT), nonattainment permitting programs, and an emissions offsetting program. The emission inventories SIP will not include a Motor Vehicle Emissions Budget and must be submitted to EPA no later than August 3, 2020. The remainder of the nonattainment SIP elements must be submitted to EPA by August 3, 2021. No applicable SIP or TCMs exist.

5.2 VMEP

Under the El Paso Metropolitan Area no applicable SIP and/or Voluntary Mobile Emissions Reduction Programs (VMEP) exist.

5.3 TERM

For this Transportation conformity determination, no Transportation Emission Reduction Measures (TERMs) are being utilized.

5.4 CMAQ

Part of the strategy to reduce emissions has been to use Congestion Mitigation & Air Quality Improvement Program (CMAQ) funds leveraged with local and other federal funds to develop projects that positively affect air quality. The El Paso Metropolitan area has made use of these funds since their inception in the Intermodal Surface Transportation Efficiency Act of 1991.

Before any project is approved and funded an evaluation is made of the costs and air quality benefits resulting from project implementation.

The Transportation Project Advisory Committee (TPAC) of the MPO is charged with comparing the results of these evaluations and making recommendations to the TPB for allocation of CMAQ funding

in each fiscal year of the TIP.

The MPO Project List includes CMAQ projects that will be funded through the Destino 2021-2024 TIP (see Appendix C).

SECTION 6.0

DETERMINATION OF REGIONAL TRANSPORTATION EMISSIONS

This section describes the modeling procedures used to determine conformity for the Amended Destino 2045 MTP and 2021-2024 TIP. It describes the TDM, mobile source emission estimation methodology, and AP-42 Model, Section 13.2.1.

6.1 Procedure

6.1.1 Mobile Source Emissions Estimate

6.1.1.1 MOVES

The EPA highway vehicle emissions factor model provides average in-use fleet emissions factors for a variety of pollutants. For this case, the model was used to produce emissions factors for four pollutants: CO, NO_x, VOC and PM₁₀ (direct vehicle PM₁₀ emissions, excluding re-suspended dust from paved roads, which is discussed later in this document). MOVES2014a is the EPA-approved model. MOVES was initially released in December 2009 to replace the MOBILE model series. Previously MOBILE6.2.03 was used to generate highway mobile source emissions inventories, motor vehicle emissions budgets, and control strategies for SIPs under the FCAA, as well as for developing environmental impact statements under the National Environmental Policy Act (NEPA).

MOVES2014a is a model that estimates volatile organic compounds (VOCs), nitrogen oxides (NO_x), particulate matter (PM_{2.5} and PM₁₀), carbon monoxide (CO), and other precursors from cars, trucks, buses, and motorcycles for SIP purposes and conformity determinations outside of California (California uses Emissions Factor Model (EMFAC)). The internal calculation procedures used in MOVES2014a are provided in various technical reports posted on EPA's MOVES Internet page located at <https://www.epa.gov/moves/moves-technical-reports>

MOVES categorizes vehicles into 13 source types and have 6 fuel types (gasoline, ethanol (E-85), diesel, compressed natural gas (CNG), electricity, and liquefied petroleum gas (LPG)). MOVES calculates emissions based on vehicle miles traveled (VMT) by vehicle type, the number of each type of vehicle in the fleet, vehicle age distribution, fuel information, meteorological data, etcetera. The user can specify many of the variables affecting vehicle emissions. Five different road types are considered in MOVES as well as a 31-year range for vehicle ages.

Table 11 shows the 13 source types, which are subsets of five HPMS vehicle types.

Table 11
MOVES Source Types and HPMS Vehicle Types

Source Type ID	Source Types	HPMS Vehicle Type ID	HPMS Vehicle Type
11	Motorcycle	10	Motorcycles
21	Passenger Car	25	Light Duty Vehicles (LDV) - Short and Long Wheelbase
31	Passenger Truck		
32	Light Commercial Truck		
41	Intercity Bus	40	Buses
42	Transit Bus		
43	School Bus		
51	Refuse Truck	50	Single Unit Trucks
52	Single Unit Short-haul Truck		
53	Single Unit Long-haul Truck		
54	Motor Home		
61	Combination Short-haul Truck	60	Combination Trucks
62	Combination Long-haul Truck		

Table 12 shows the five different road types and their description.

Table 12
Road Types

Road Type	Description
Off-Network (roadtype 1)	all locations where the predominant activity is vehicle starts, parking and idling (parking lots, truck stops, rest areas, freight or bus terminals)
Rural Restricted Access (2)	rural highways that can only be accessed by an on-ramp
Rural Unrestricted Access (3)	all other rural roads (arterials, connectors, and local streets)
Urban Restricted Access (4)	urban highways that can only be accessed by an on-ramp
Urban Unrestricted Access (5)	all other urban roads (arterials, connectors, and local streets)

6.1.2 TTI Emissions Estimation Utilities

The following is a summary of the series of tools developed by TTI for developing link-based, time-of-day, on-road mobile source emissions estimates for air quality analyses. These utilities produce emissions factors with the latest MOVES emissions factor model, and apply them to travel model-based activity estimates to calculate emissions at user-specified temporal and spatial scales. The location of emissions by grid, or travel network link coordinates, may also be specified. The emissions estimation tools are: RatesCalc, EmsCalc, TransVMT, VMTmixBuild, OffNetActCalc, VehpopulationBuild and MOVESfleetInputBuild. RatesCalc – produces and/or compiles emissions rate tables from MOVES output; EmsCalc – calculates hourly link emissions for a county (or coded sub-county area) using the estimated link VMT and speeds, VMT mixes, off-network activity, and emissions factors from MOVES, RatesCalc, or RatesAdj; TransVMT – estimates the on-road fleet VMT and operational speeds for use in air quality analyses (input to EmsCalc), based on TDM data sets; VMTmixBuild – formats gasoline and diesel MOVES source type (vehicle type) VMT mix input to EmsCalc; OffNetActCalc – calculates SHP, Source-hours-extended-idling (SHI), APU hours, and

starts inputs to EmsCalc; VehpopulationBuild – calculates vehicle population estimates input to OffNetActCalc based on vehicle registration data and other factors; and MOVESfleetInputBuild – produces sourcetypeagedistribution and avft (i.e., fuel fractions) table inputs to MOVES, based on vehicle registration data, MOVES default data, and VMT mix estimates (See Appendix I).

6.2 Calculated Emissions

6.2.1 Calculated Link-Based Emissions

The main components of the emissions estimates (link VMT, VMT mix, and emissions factors) were combined according to the procedures described to produce the resulting emissions estimates.

The resulting emissions estimates are summarized in Table 13, 14 and 15. Additional detail in the form of hourly and 24-hour emissions by functional classification and vehicle type are available electronically (Appendix I).

6.2.2 Calculated Emissions for Donut Areas

Emissions for donut areas are not applicable for this analysis since nonattainment area is not outside the metropolitan planning area boundary and is not a donut area (reference: 40 CFR 93.101 Definitions).

6.3 Emissions Estimations Utilities

6.3.1 TRANSVMT

The TRANSVMT utility post-processes travel demand models outputs to produce hourly, on-road vehicle, seasonal and day-of-week specific, directional link VMT, and speed estimates. The TRANSVMT utility processes a TDM traffic assignment by multiplying the link volumes by the appropriate HPMS, seasonal, or other VMT factors. Hourly factors are then used to distribute the link VMT to each hour in the day. The TTI speed model is used to estimate the operational time-of-day link speeds for each direction. Since intrazonal links are not included in the TDM, special intrazonal links are created and the VMT and speeds for these special links are estimated using the intrazonal trips from the trip matrix and the zonal radii. The link VMT and speeds produced by TRANSVMT are subsequently input to the EmsCalc utility for applying the MOVES-based emissions factors (as well as with other utilities to develop off-network activity estimates).

6.3.2 VehPopulationBuild

The VehPopulationBuild utility builds the sourcetypeyear data files in a format consistent with the MOVES input database table and the SUT/fuel type population input file (can be used with the EmsCalc utility to estimate emissions or the OffNetActCalc utility to estimate starts and SHP) using the VMT mix and the TxDMVregistration data sets. The TxDMV registration data sets are three sets of registration data (an age registration data file, a gas trucks registration data file, and a diesel trucks registration data file) that list 31 years of registration data.

6.3.3 OffNetActCalc

The OffNetActCalc calculates the analysis scenario (i.e., year, season, day type) source-hours-parked (SHP), source-hours extended-idling (SHI), starts, and auxiliary power unit (APU) hours by hour, SUT, and fuel type used to estimate emissions using the EmsCalc utility. The starts activity is

calculated using the SUT/fuel type population and the starts per vehicle (typically the MOVES default). The SHI and APU hours are a function of hotelling hours (hours spent by drivers of long-haul trucks with their trucks parked during mandatory rest periods). This utility has two options for calculating the hotelling hours. Using the first option, the analysis scenario 24-hour hotelling hours is calculated using a user-supplied extended idle factor applied to the source hours operating (SHO) data. The second option (and suggested method) uses base data (24-hour hotelling, link VMT and speeds, and VMT mix), the analysis scenario data used to calculate the SHP, and the analysis scenario SHP to calculate the analysis scenario 24-hour hotelling hours.

6.3.4 MOVESactivityInputBuild

The MOVESactivityInputBuild utility builds the roadtypedistribution, hourvmtfraction, avgspeeddistribution, roadtype, hpmsvtypeday, sourcetypeedayvmt, year, state, zone, zoneroadtype, monthvmtfraction, and dayvmtfraction data files in a format consistent with the MOVES input database tables using the link-based hourly VMT and speeds developed with the TRANSVMT or VirtualLinkVMT utility, the VMT mix, and the MOVES defaults. The utility also has the option of building the sourcetypeage (adjusted to reflect the 24-hour VMT mix), starts, and hotelling hours data files in a format consistent with the MOVES input database tables using the output from the OffNetActCalc utility, along with inputs from the MOVES runs and the MOVES defaults.

6.3.5 MOVESfleetInputBuild

The MOVESfleetInputBuild utility builds the sourcetypeagedistribution database table and fuel/engine fraction inputs to MOVES using the TxDOT registration data sets and the MOVES default database tables.

6.3.6 RatesCalc

The RatesCalc utility calculates emissions rates in terms of rate/SHP for the evaporative emissions processes using the data in the County Data Base (CDB) used in the MOVES emissions rates run and the MOVES default database.

6.3.7 RatesAdj

The RatesAdj utility applies emissions rate adjustments to an emissions rate database table produced by RatesCalc utility (ttirateperdistance, ttirateperstart, ttirateperhour, or ttiratepershp) or by this utility to produce a new emissions rate database table in the same format as the input emissions rate database table.

6.3.8 EmsCalc

The EmsCalc utility estimates the hourly link emissions for one user-specified county using the emissions factors (either from RatesCalc or RatesAdj), the 24-hour or time period VMT mix, the hourly link VMT and speeds activity estimates (either from TRANSVMT or VirtualLinkVMT), and the off-network activity (SHP, starts, and SHI). This utility produces a tab-delimited output summary (including hourly and 24-hour totals) and hourly link emissions output files (optional). The primary inputs to EmsCalc are: emissions factors from RatesCalc or RatesAdj; link-based hourly VMT and speeds developed with the TRANSVMT or VirtualLinkVMT utility. For each link, the following information is input to EmsCalc: link start node, link end node, link county number, link roadway type

number, link area type number, link VMT, and link operational speed estimate; 24-hour or time period VMT mix by roadway type, MOVES SUT, and MOVES fuel type; and Off-network activity (SHP, starts, SHI, and APU hours) by hour and SUT/fuel type.

The emissions estimation can be categorized by two basic types based on the type of emissions factors: the roadway-based emissions and the off-network-based emissions. For the roadway-based emissions (tirateperdistance emissions factors), the VMT for each link is distributed to each of the SUT/fuel type combinations listed in the VMT mix by roadway type (as designated in the VMT roadway type designations). For link speeds greater than 75 mph, the emissions factors for 75 mph are used. For link speeds less than 2.5 mph, the emissions factors for 2.5 mph are used. For those link speeds that fall between the 16 MOVES speeds, the emissions factors are interpolated using the emissions factor interpolation methodology in the following section. For the off-network emissions, the tirateperstart, tirateperhour, and tiratepershp emissions rates (by SUT/fuel type) are multiplied by the appropriate activity, which is determined by the emissions process.

The emissions estimates are output in a tab-delimited file (including all of the SUT/fuel type combinations listed in the VMT mix on a single line, separated by a tab character) for the specified county by pollutant, link roadway type, and SUT/fuel type combination for each of the specified episode time periods. A 24-hour (or total if all 24 hours are not specified) output is also included in the tab-delimited file.

Example Emissions Factor Interpolation

To calculate emissions factors for link speeds that fall between two of the 16 MOVES speed bin speeds, an interpolation methodology similar to the methodology used with MOBILE6 is used. This methodology interpolates each emissions factor using a factor developed from the inverse link speed and the inverse high and low bounding speed bin speeds. The following is an example for a link speed of 41.2 mph.

The interpolated emissions factor (EF_{Interp}) is expressed as:

$$EF_{Interp} = EF_{LowSpeed} - FAC_{Interp} \times (EF_{LowSpeed} - EF_{HighSpeed})$$

Where:

$EF_{LowSpeed}$ = emissions factor (EF) corresponding to the speed below the average link speed;

$EF_{HighSpeed}$ = EF corresponding to the speed above the average link speed; and

$$FAC_{Interp} = \left(\frac{1}{Speed_{link}} - \frac{1}{Speed_{low}} \right) / \left(\frac{1}{Speed_{high}} - \frac{1}{Speed_{low}} \right)$$

Given that:

$EF_{LowSpeed}$ = 0.7413 g/mi;
 $EF_{HighSpeed}$ = 0.7274 g/mi;
 $Speed_{link}$ = 41.2 mph;
 $Speed_{low}$ = 40 mph; and
 $Speed_{high}$ = 45 mph.

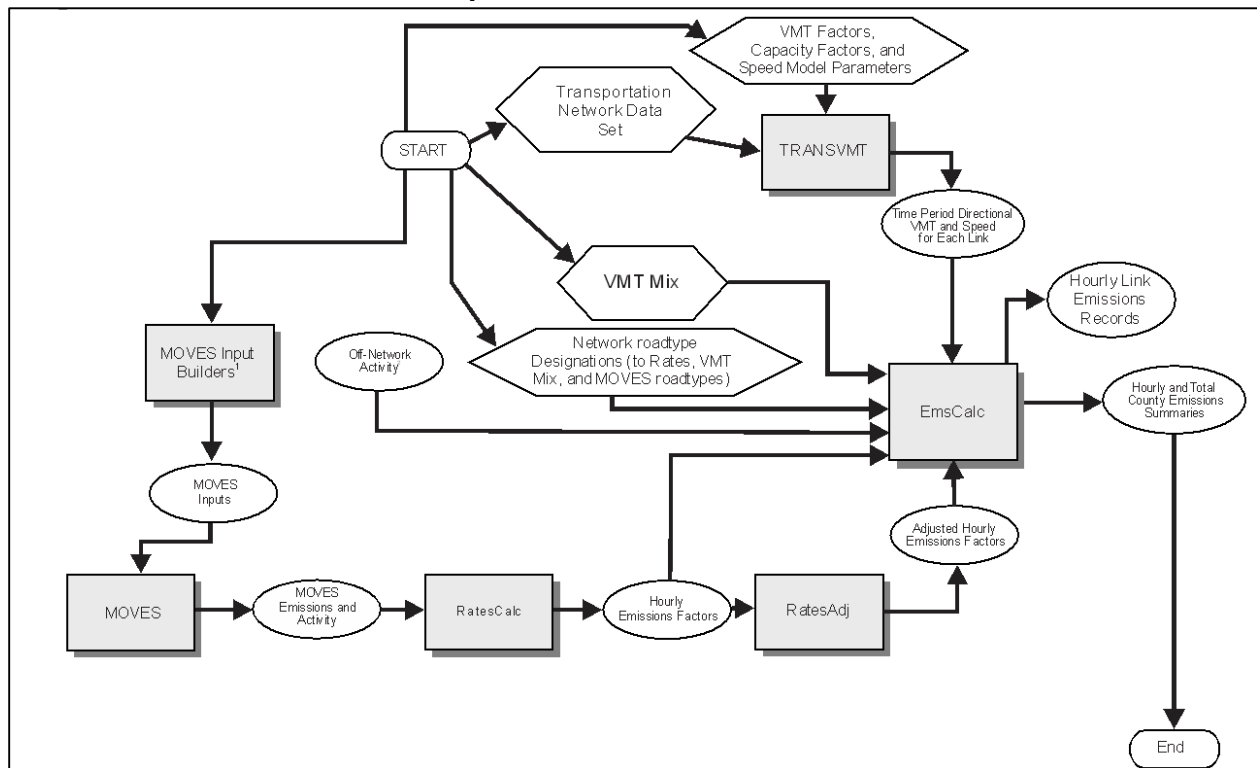
$$FAC_{Interp} = \left(\frac{1}{41.2mph} - \frac{1}{40mph} \right) \bigg/ \left(\frac{1}{45mph} - \frac{1}{40mph} \right) = \frac{-0.00073}{-0.00278} = 0.26214;$$

$$EF_{Interp} = 0.7413 \text{ g/mi} - (0.26214) H (0.7413 \text{ g/mi} - 0.7274 \text{ g/mi});$$

$$= 0.7377 \text{ g/mi.}$$

The following diagram shows the overall emissions estimate process flow.

Diagram 1
Travel Demand Model Network Link-Based
Hourly MOVES Emissions Estimates



¹MOVESactivityInputBuild, MOVESfleetInputBuild, MOVESmetInputBuild, and VehPopulationBuild.

²VehPopulationBuild, and OffNetActCalc.

6.4 Final Emission Analysis Results

6.4.1 Network-Based Model

Table 13 is a summary of the VMT and associated CO emissions for the winter season emissions.

Table 13
Winter Season CO Emission Data¹

YEAR	Total Vehicle Miles of Travel (Including Intrazonal)	CO Emissions in Tons per Day
MVEB	-	29.66
2020²	1,311,154	5.06

¹ All values are average winter weekday estimates. The VMT listed are used to calculate the average speed. Using 1990 meteorology data.

² For the purpose of this conformity determination per guidance from the consultative partners, a regional emissions analysis for CO was conducted only for year 2020, based upon the EPA approval of the El Paso CO Limited Maintenance Plan (LMP) in September 2017. In accordance with the CO LMP, a regional emissions analysis for analysis years beyond 2020 is not required.

Sources: Networks and Traffic Assignments, TxDOT. VMT, Emission Factors, and Emission Estimates, TTI.

Table 14 is a summary of the VMT and associated PM₁₀ emissions for the summer\winter season emissions.

Table 14
PM₁₀ Emission Data

Year	Season	VMT¹	PM₁₀ Emissions (tons/day)
MVEB	--	--	12.05
2020	Summer	19,415,378	6.80
	Winter	20,026,973	7.28
2030	Summer	22,015,123	7.39
	Winter	22,708,612	7.88
2040	Summer	24,297,818	8.01
	Winter	25,063,213	8.54
2045	Summer	25,245,745	8.30
	Winter	26,041,000	8.85

¹ VMT are from summer and winter action assignments. Using 2017 weather station data.

Source: Texas A&M Transportation Institute

Table 15 is a summary of the VMT and associated VOC and NO_x emissions for the summer season emissions (June through August weekday (average Monday through Friday)).

Table 15
Summer Season VOC and NOx Emission Data^{1,2}

YEAR	Total Vehicle Miles of Travel (Including Intrazonal)	VOC Emissions in Tons per Day	NOx Emissions in Tons per Day
2017	95,887	0.053	0.10
2020	105,975	0.047	0.08
2030	120,830	0.028	0.04
2040	134,283	0.019	0.03
2045	140,139	0.019	0.03

¹All values are average summer weekday estimates. The VMT listed are used to calculate the average speed. Using 2017 weather station data.

² El Paso regional TDM zones comprising the Sunland Park ozone nonattainment area, in Dona Ana County, NM.

6.4.2 Off-Network TERMS

Off-network TERM have not been included in the El Paso SIP, thus there is no requirement to make adjustment.

6.4.3 Summary

The CO and PM₁₀ emissions from the travel demand model all meet the MVEB requirements without any adjustments or additional credits required from VMEP, TERM, or TCMs. All VOC and NOx emissions from the travel demand model meet the requirements as establish on the [“Transportation Conformity Guidance for 2015 Ozone NAAQS Nonattainment Areas”](#) without any adjustments or additional credits required from VMEP, TERM, or TCMs.

This conformity determination demonstrates that the total emissions calculated from the modeled roadway network for future years will be at levels below the baseline year (2017) as required for the interim emissions test no-greater-than baseline year. Table 3 provides the conformity results for the VOC and NOx no greater-than-baseline year emissions tests. As well, this conformity determination demonstrates that the total emissions calculated from the modeled roadway network for future years will be at levels below the MVEB. Table 2, on page 12 provides the conformity results for both the PM₁₀ and CO budget tests.

For the purpose of this conformity determination per guidance from the consultative partners, meteorological inputs to MOVES2014a for CO analysis were from year 1990, and for VOCs, NOX and PM10 analysis were from year 2017.

SECTION 7.0

INTERAGENCY CONSULTATION

7.1 Process Description

Section 176(c)(4)(B)(i) of the FCAA contain the guidelines that are used by the EPMPO during the interagency consultation process for conformity. Based on these guidelines, the EPMPO must provide the opportunity for consultation with the group of partners (listed below) prior to the conformity determination. Preliminary technical meetings are held with the consultative partners and the EPMPO to discuss the planning process prior to the commencement of emissions modeling. The modeling parameters, planning assumptions, as well as the type of model to be used are discussed with the consultative partners.

Upon conclusion of the preliminary technical meetings, the emissions modeling process begins. Once the emissions estimates are developed, they are included in the transportation conformity report. If there is a need to re-evaluate the emissions estimates and conduct additional modeling, the consultative partners are notified.

The EPMPO provides a 30-day public comment period. At the end of the 30-day public comment period, the conformity report is prepared for submittal to the TPB for review. The finalized conformity document is then sent to all consultative partners for the beginning of a 90-day review period, in which the consultative partners provide comments on the conformity document before final approval. The EPMPO responds to all comments, and as needed, incorporates the requested edits into the conformity document. Once all edits have been incorporated, the conformity document may be submitted to the consultative partners for final review of the transportation conformity report.

The consultative procedures specifically require coordination with the following government agencies during the Transportation Conformity Determination development process and for the interagency review:

- EPA
- FHWA (Texas and New Mexico)
- FTA
- TxDOT
- TCEQ
- NMDOT
- NMED

The EPMPO's committee structure helps to ensure that the consultative requirements are met during the Transportation Conformity Determination development process. TxDOT, NMDOT, and NMED are members of the TPAC of the MPO. This committee recommends approval of the MTP, the TIP, and recommends submittal of the TCR to the TPB.

All documents are submitted to all the consultative partners including the Texas and New Mexico Divisions of the FHWA.

Interagency consultation efforts conducted for this conformity determination included the development of a Pre-Analysis Consensus Plan, multiple consultation conference calls with the Consultative Group, and the opportunity for review and comments on the transportation conformity determination document by the consultation partners.

In addition, the meeting minutes from various consultative calls specific to this conformity determination can be found in Appendix F.

SECTION 8.0

PUBLIC PARTICIPATION

The goal of the Public Participation program (PPP) is to involve the community in a proactive planning effort that provides the opportunity for input in the early stages of the conformity determination. The guidelines followed for public participation can be found at the following link: <http://www.elpasompo.org/civicax/filebank/blobdload.aspx?BlobID=23726>

The 30-day public comment period was held from March 29th, 2020 to April 28th, 2020. Pursuant to recent actions taken by Texas Governor Greg Abbot that suspend certain open meeting requirements, and the Governor's Executive Order No. GA-08 ordering that all Texans shall avoid gathering in groups of 10 or more people, as well as similar directives issued by the Centers for Disease Control and Prevention (CDC), and President Donald J. Trump, the public involvement for this transportation Conformity Report will be done through our website and social media:

Facebook: <https://www.facebook.com/elpmpo>

Twitter: <https://twitter.com/elpmpo>

Also, a virtual public meeting was hosted April 8, 2020 from 5:00-7:00 PM. To join the public meeting visit the following link

<https://elpasompo.my.webex.com/elpasompo.my/j.php?MTID=m29093628ae3c81c998fbc2cf815c751c>

Meeting access code: 626 090 339

Meeting password: XpgrH83BmG9

or call in at (+1-408-418-9388).

Copies of the draft transportation conformity report were provided free of charge, however, copies of over-sized or lengthy materials were available at reproduction and postage costs consistent with the State of Texas Comptroller's policy. Electronic copies of draft documents and major updates are posted on the MPO website for public viewing.

There were no public comments received during the public involvement period of the Amendment Destino 2045 Transportation Conformity Document and 10 general comments were received (refer to Appendix K).